

# IBM POWER9 technology-based systems deliver a simplified and accelerated journey to cloud with the IBM Power Private Cloud Rack solution; IBM Power Systems deliver hardware enhancements

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## Overview

IBM<sup>(R)</sup> delivers a new POWER9<sup>TM</sup>-based cloud solution and IBM Power<sup>(R)</sup> Systems I/O enhancements to the platform.

### IBM Power Private Cloud Rack solution

The IBM Power Private Cloud Rack solution is an open hybrid cloud offering based on IBM and Red Hat<sup>(R)</sup> portfolios. It comes pre-configured and ready to go with all you need to quickly inject modernization into your existing applications.

The solution combines an optimized stack of hardware and software to simplify the deployment of a private cloud environment.

The Power Private Cloud Rack solution is available in one deployment size:

- Three S922 node configuration, or more
- Includes an IBM FlashSystem 5200, IBM Storage Networking SAN24B-6 switches, and an optional LAN switch
- Contains Red Hat Enterprise Linux (RHEL) 8, IBM PowerVM Enterprise Edition, IBM PowerVC for Private Cloud 2.0, Red Hat OpenShift Container Platform (OCP), and IBM Spectrum Scale Data Management Edition

### Power Systems enhancements

In addition, Power Systems includes the following new I/O enhancements:

- The PCIe3 2-Port 16 Gb Fibre Channel (FC) Adapter (#EN1G/#EN1H), which was originally announced with AIX<sup>(R)</sup> OS support only, now provides support for Linux<sup>(R)</sup>.
- A new feature #ENSM helps to instruct manufacturing to create multiple namespaces of the same size, as indicated by the IBM i Load Source Name Space specify code size, on the U.2 NVMe load source mirrored device pair.

## Feature exchange

Not applicable

## Key requirements

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Power Private Cloud Rack solution is a preconfigured solution.

For detailed information about Power S922 server requirements, see Hardware announcement [120-025](#), dated July 14, 2020.

For detailed information about IBM FlashSystem<sup>(R)</sup> 5200 requirements, see Hardware announcement [121-004](#), dated February 9, 2021.

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## Planned availability date

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March 12, 2021

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## Description

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### Power Private Cloud Rack solution

The Private Cloud Rack solution helps clients achieve a shorter time to value as compared to traditional Power alternatives with a simplified infrastructure purchase experience. The solution offers several key benefits:

#### *Rapid digital transformation*

- Get your on-premises private cloud up and running in days versus weeks or months
- More automation helps to further simplify
- New cloud-native apps help reduce costs and maximize ROI

#### *Decreased IT spending*

- Twice as much performance per compute node and 3.2 times greater container density per core as compared to x86 architecture enables savings on software licensing
- Save on workload licensing per containers by leveraging POWER<sup>(R)</sup> doubled threads count

#### *Integration of existing AIX and IBM i workloads with new cloud-native apps*

- Combines the unique business benefits of IBM AIX and IBM i with new cloud-native apps on a modern platform
- Evolves AIX workloads onto containerized environments
- Protects past investments with a seamless integration of existing applications with new cloud-native technologies

#### *Increased security*

- End-to-end solution from one vendor (IBM and Red Hat) lowers the risk of business disruption
- Industry-leading end-to-end security (hardware, firmware, and PowerVM<sup>(R)</sup>) and no virtualization vulnerabilities
- Available data-at-rest encryption to secure all your data
- Available enhanced security features offered by PowerSC to secure your data computing

#### *Pre-configured but flexible*

- Enables seamless management of containers across the IT infrastructure, including multiple clouds
- Helps avoid vendor lock-in with an open platform, whether on-premises or in a public cloud

- Adjustable to your current data center standards

## **Power Private Cloud Rack solution pre-configuration**

The Power Private Cloud Rack solution is offered in a pre-configured setup.

This is an optimized full stack for a production-level environment. It leverages the unique virtualization technologies of PowerVM to accommodate all the software stack required in just three servers. Additional nodes can be added on the initial configuration as needed.

A minimum configuration includes:

- Hardware stack
  - Three Power System S922 servers
  - One FlashSystem 5200 storage enclosure with a minimum of 9.6 TB
  - Two SAN24B-6 switches with 24 Fibre Channel ports and industry-leading Gen 6 Fibre Channel technology
  - Optional IBM Ethernet Switch with high-performance Gigabit Ethernet Layer 2 and Layer 3 switch featuring 52 ports
  - One IBM Enterprise Slim Rack with 42 EIA units of vertical mounting space and 19-inch rack enclosure
- Software stack
  - RHEL 8 for POWER9
  - IBM PowerVM Enterprise Edition
  - IBM PowerVC for Private Cloud 2.0
  - Red Hat OpenShift Container Platform
  - IBM Spectrum Scale Data Access Edition or IBM Spectrum Scale Data Management Edition

### *FlashSystem 5200*

The new FlashSystem 5200 is an integral part of the PCP Rack solution. FlashSystem 5200 is a powerful, compact, Non-Volatile Memory Express<sup>(R)</sup> (NVMe), end-to-end platform that delivers the full capabilities of IBM FlashCore<sup>(R)</sup> Modules, storage class memory (SCM), and IBM Spectrum<sup>(R)</sup> Virtualize.

The FlashSystem 5200 NVMe control enclosure features:

- Two node canisters, each with an eight-core processor
- 64 GB, 256 GB, and 512 GB cache options (32 GB, 128 GB, or 256 GB per canister)
- 10 Gb copper Internet Small Computer System Interface (iSCSI) connectivity standard with optional 32/16 Gb FC, 12 Gb serial attached SCSI (SAS), and 25/10 Gb iSCSI (optical) connectivity
- 12 Gb SAS ports for expansion enclosure attachment
- Twelve slots for 2.5-inch small form factor (SFF) NVMe drives

For more information on FlashSystem 5200, see Hardware Announcement [121-004](#), dated February 9, 2021.

## **IBM Power Systems enhancements**

In addition, Power Systems servers are enhanced as follows:

### *PCIe3 Dual-Port 16 Gb Fibre Channel Adapter (#EN1G/#EN1H)*

The existing PCIe3 x8 dual-port Fibre Channel (16 Gb/s) adapter, a PCI Express (PCIe) generation 3 (Gen3) x8 adapter (#EN1G/#EN1H), is now supported with the Linux operating system. This adapter is available for Power S922, S914, S924,

E950, and E980 servers and now available for Power H922 and H924 initial and MES orders.

Software requirements (assuming the server supports this software level):

- RHEL 8, for POWER LE, version 8.3, or later
- AIX 7.2 with the 7200-04 Technology Level and Service Pack 7200-04-02-2028, or later
- AIX 7.2 with the 7200-05 Technology Level, or later

#### *Specify Code Configure all IBM i Namespaces (#ENSM)*

This specify code instructs manufacturing to create multiple namespaces of the same size, as indicated by the IBM i Load Source Namespace specify code size, on the U.2 NVMe load source mirrored device pair. When using this feature, the U.2 NVMe load source device and its mirror device must be identical IBM i NVMe device feature codes. All of these mirrored namespaces will be added to the system's Active Server Page (ASP). If there are more than two U.2 NVMe devices, only the first two devices will be configured. Additional devices will remain unconfigured.

Feature ENSM is only allowed on initial system orders, and feature ENSM is allowed on a storage configuration with U.2 NVMe devices only, not a combination of NVMe and SAS HDD/SSD. Feature ENSM is also not allowed with feature code 0837 - SAN Load Source Specify (Boot from SAN). Feature ENSM is not applicable with PCIe NVMe Add In Cards. Only U.2 devices are configurable.

Feature ENSM only applies to the P05 IBM i software tier configurations, which are:

Power System S922 (MTM 9009-22G) with the 1-core processor (feature EP5Y)  
Power System S914 (MTM 9009-41G) with the 4-core processor (feature EP50)

- Attributes: Creates the maximum number of namespaces of the size indicated by the IBM i Load Source Namespace code on the NVMe Load Source devices
- Requires: Feature 2145 Primary Operating System Indicator --IBM i; feature 5000 Software Preload required or feature 0205 RISC-TO-RISC Data Migration plus identical IBM i NVMe U.2 devices; and the IBM i NVMe load source namespace size and the system should not be partitioned (single/unpartitioned only)

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## Product number

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The following are newly announced features on the specific models of the IBM Power Systems 1164, 7063, 7965, 8831, 9009, and 9223 machine type:

### **Planned Availability Date February 19, 2021**

#### ***New Feature***

Description	Machine type	Model number	Feature number
Order Routing Indicator- System Plant	1164 7063	95X CR1	9169
PCIe3 2-Port 16Gb Fibre Channel Adapter	9223 9223	22S 42S	EN1G
PCIe3 LP 2-Port 16Gb Fibre Channel Adapter	9223	22S	EN1H
Specify Code Configure all IBM i Namespaces	9009 9009	22G 41G	ENSM

The following are newly announced features on the specific models of the IBM Power Systems 1164, 7063, 7965, 8831, 9009, and 9223 machine type:

### **Planned Availability Date March 12, 2021**

## New Feature

Description	Machine type	Model number	Feature number
Variable Length, Yellow Cat5e Cable	8831	S52	ECCJ
IBM Power Private Cloud Rack Solution Indicator	7063	CR1	ELG2
	7965	S42	
	8831	S52	
	9009	22G	
Rack Content Specify: 4662-6H2 - 1EIA	7965	S42	EN32

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## Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 121-009](#)

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## Publications

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No publications are shipped with the announced product(s).

The IBM Knowledge Center provides you with a single point of reference where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access by going to [IBM Knowledge Center](#) for all your product information needs.

To access the IBM Publications Center Portal, go to the [IBM Publications Center](#) website.

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. A large number of publications are available online in various file formats, which can currently be downloaded.

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## Services

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### IBM Systems Lab Services

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IBM Systems Lab Services offers a wide array of services available for your enterprise. It brings expertise on the latest technologies from the IBM development community and can help with your most difficult technical challenges.

IBM Systems Lab Services exists to help you successfully implement emerging technologies so as to accelerate your return on investment and improve your satisfaction with your IBM systems and solutions. Services examples include initial implementation, integration, migration, and skills transfer on IBM systems solution capabilities and recommended practices. IBM Systems Lab Services is one of the service organizations of IBM's world-renowned IBM Systems Group development labs.

For details on available services, contact your IBM representative or go to the [IBM Systems Lab Services](#) website.

### Global Technology Services

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IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an on-demand business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or go to the [IBM Global Technology Services](#) website.

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or go to the [Resiliency Services](#) website.

Details on education offerings related to specific products can be found on the [IBM Skills Gateway](#) website.

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## Technical information

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### Planning information

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#### *Cable orders*

No cable orders required

### Security, auditability, and control

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The client is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

### IBM Systems Lab Services

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For details on available services, contact your IBM representative or go to the [IBM Systems Lab Services](#) website.

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## Terms and conditions

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### MES discount applicable

No

### Field-installable feature

Yes

### Warranty period

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM. An IBM part or feature installed during the initial installation of an IBM machine is subject to the full warranty period specified by IBM. An IBM part or feature that replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature are the same as those for the machine in which it is installed.

### Client setup

No

### Machine code

The same license terms and conditions as the base machine apply.

**Optional features warranty period**

Not applicable

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**Prices**

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For additional information and current prices, contact your local IBM representative or IBM Business Partner.

The following are newly announced features on the specific models of the IBM Power Systems 1164, 7063, 7965, 8831, 9009, and 9223 machine type:

Description	Model number	Feature number	Purchase price	Maint. charge	Minimum Monthly	Initial/MES/Both/support	RP CSU	MES
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Order Routing Indicator	System 95X	9169				Initial	N/A	No
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Description	Model number	Feature number	Purchase price	Maint. charge	Minimum Monthly	Initial/MES/Both/support	RP CSU	MES
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Order Routing Indicator	System CR1	9169				Initial	N/A	No
Private Cloud Rack Solution	CR1	ELG2				Initial	N/A	

Description	Model number	Feature number	Purchase price	Maint. charge	Minimum Monthly	Initial/MES/Both/support	RP CSU	MES
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Private Cloud Rack Solution	S42	ELG2				Initial	N/A	
Rack Content Spcf	4662-6H2 S42	EN32				Initial	N/A	

Description	Model number	Feature number	Purchase price	Maint. charge	Minimum Monthly	Initial/MES/Both/support	RP CSU	MES
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Private Cloud Rack Solution	S52	ELG2				Initial	N/A	
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Description	Model number	Feature number	Purchase price	Maint. charge	Minimum Monthly	Initial/MES/Both/support	RP CSU	MES
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Private Cloud Rack Solution	22G	ELG2				Initial	N/A	
Spcf Config IBMi Namespaces	22G	ENSM				Initial	N/A	No
	41G					Initial	N/A	No

Description	Model number	Feature number	Purchase price	Maint. charge	Minimum Monthly	Initial/MES/Both/support	RP CSU	MES
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PCIe3 2-Port 16Gb FC Adapter	22S	EN1G		Both	Yes	No
	42S			Both	Yes	No
PCIe3 LP 2-Port 16Gb FC Adap	22S	EN1H		Both	Yes	No

The following are features already announced for the IBM Power Systems 8831 machine type:

Description	Model number	Feature number	Purchase price	Minimum Monthly Maint. charge	Initial/ Monthly MES/ Both/ support	RP CSU MES
Machine type 8831						
Variable Yellow Cat5e Cable	S52	ECCJ			Initial	N/A

RP MES = Return parts, miscellaneous equipment specifications

CSU = Customer setup

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## Pricing terms

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Prices in the following PDF prices link are suggested list prices on day of announcement for the U.S. only. They are provided for your information only. Dealer prices may vary, and prices may also vary by country. IBM list price does not include tax or shipping and is subject to change without notice.

[ENUS-121-009-LIST\\_PRICES\\_2021\\_02\\_09.PDF](#)

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[IBM United States](#)

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## Corrections

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**(Corrected on May 8, 2021)**



Correction made to Description section.

**(Corrected on May 7, 2021)**

Modifications made to Overview and Description sections.